

Translation

Rec'd PCT/PTO

28 MAR 2005
PCT/FR2003/002795

PATENT COOPERATION TREATY



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference WOB02CNRSOLS	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/FR2003/002795	International filing date (day/month/year) 23 septembre 2003 (23.09.2003)	Priority date (day/month/year) 26 septembre 2002 (26.09.2002)
International Patent Classification (IPC) or national classification and IPC C07B 37/04, 37/12, 37/02, C07C 213/08, 219/10, 219/12, 209/08, 211/63, 213/02, 215/44, 67/03		
Applicant CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet. <input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of _____ sheets.
3. This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 15 mars 2004 (15.03.2004)	Date of completion of this report 11 October 2004 (11.10.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/FR2003/002795

I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☒ the description:
 pages 1-128, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the claims:
 pages 1-31, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the drawings:
 pages 1-13, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1-31	YES
	Claims		NO
Inventive step (IS)	Claims	1-31	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-31	YES
	Claims		NO

2. Citations and explanations

This report makes reference to the following documents:

- D1: FRAGA-DUBREUIL J ET AL: "Grafted ionic liquid-phase-supported synthesis of small organic molecules", TETRAHEDRON LETTERS, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, Vol. 42, No. 35, 27 August 2001 (2001-08-27), pages 6097-6100, XP004298190, ISSN: 0040-4039
- D2: DUBREUIL J F ET AL: "Rate accelerations of 1,3-dipolar cycloaddition reactions in ionic liquids", TETRAHEDRON LETTERS, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, Vol. 41, No. 38, 16 September 2000 (2000-09-16), pages 7351-7355, XP004211923, ISSN: 0040-4039

1. Novelty and inventive step (EPC Articles 54 and 56)

The subject matter of the present application is novel and inventive (EPC Articles 54 and 56).

Documents D1 and D2 describe uses of functionalised imidazolium salts for cycloaddition and Knoevenhagel reactions. The difference between documents D1 and D2 and the present application is that the ionic liquid is used in the present application as a liquid matrix which acts

as a solvent and as a soluble support to retain the substrates. The subject matter of the claim in the present application is therefore novel.

Claims 13, 14, 24 and 25 are also novel because the prior art ionic liquids were not used as liquid matrices.

The closest prior art is represented by document D1, which describes a use of an ionic liquid as a soluble support. The difference between document D1 and the present application is that the ionic liquid is used in the present application also as a liquid matrix. The problem addressed by the applicant was that of finding an alternative use for an ionic liquid.

It would not be obvious for a person skilled in the art to change the use of an ionic liquid as a soluble support, as described in document D1, to the use as a liquid matrix because this use is not suggested by the prior art.

The subject matter of claim 1 of the present application is therefore inventive (EPC Article 56).

The subject matter of claims 13, 14, 24 and 25 is also considered to involve an inventive step because the use of an ionic liquid as a liquid matrix is inventive.